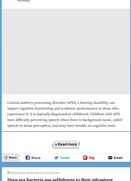

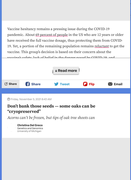

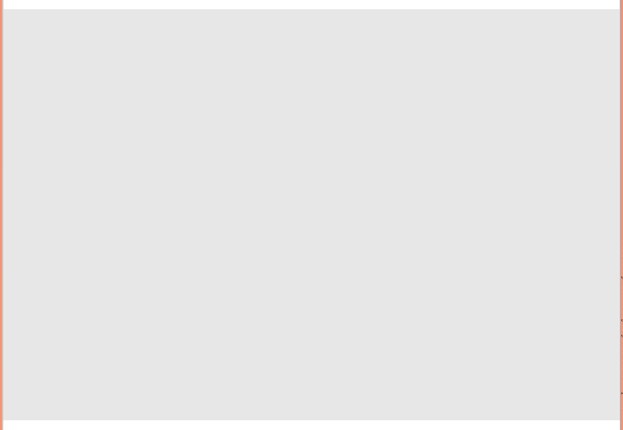

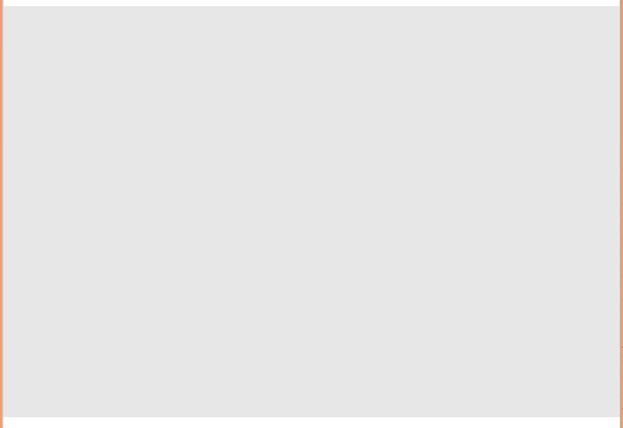

Wednesday, April 7, 2021 8:44 AM

People of the Tiahuanaco civilization engineered their own rocks to build temples and monuments

The discovery illustrates the great ingenuity of ancient construction workers

Maria Teresa Cardozo Robles
Geology

Brattarb via Wikimedia Commons.

Tiahuanaco is a small village south-east of Lake Titicaca, is a world-famous archeological site with 1,400-year-old monuments and ceremonial buildings. The precision and detail of these sculptures called the attention of scientists who doubted that they could have been created with the simple tool technology known at the time.

A new pre-print, a scientific study that is completed but have not yet been peer-reviewed by other scientists, claims to solve the mystery: the 'H shaped' blocks of one of the most iconic temples 'Pumapunku' is not made of rock (as it was always thought), they're made of sand!

Since archaeologists found the ruins of Tiahuanaco, they tried to find their source of materials, as almost all of the ancient city was made of rock blocks. In 1892 researchers discovered that these rocks (called andesite) were collected from an outcrop located at the foot of a volcano named "Cerro Khapia."

A geochemical analysis revealed that the composition of the H shaped blocks from Pumapunku coincided with the andesitic sand but that also included organo-mineral binders, bat droppings, and other ingredients used to produce andesite geopolymer blocks.

The discovery of Tiahuanaco's material supply route revealed the great ingenuity of ancient construction workers who created incredibly resistant blocks by using what they could find around them in ways archeologists had not anticipated.

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Monday, November 29, 2021 8:20 AM

A newly discovered cryosphere-dwelling yeast stays alive by making ethanol

Rhodotorula frigidialcoholis was isolated from 150,000-year-old permafrost in the McMurdo Dry Valleys of Antarctica

Mitra Kashani
Microbial Ecology
Centers for Disease Control and Prevention

Photo by USGS on Unsplash

Most of the Earth's biosphere is permanently cold and contains environments below 0° C, known as the cryosphere. Microorganisms like bacteria and fungi call the cryosphere home, despite the seemingly inhospitable conditions. Some can even stick around in the ice for thousands of years.

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Monday, November 29, 2021 8:06 AM

El sur de Inglaterra alberga a una pequeña, pero prospera población de walabíes de cuello rojo

Los walabíes fueron introducidos al país al principio del siglo XX

Maria Gatta
Ecology and Conservation Biology
University of the Witwatersrand, Johannesburg

Image by pen_ash from Pixabay

Walabíes: son muy monos, relativamente pequeños, y para los europeos, tienen una apariencia inédita. Esto es lo que llevó a la introducción del walabí de cuello rojo, una especie australiana, a principios del siglo XX a países como Inglaterra, Irlanda, y Francia. En aquellos tiempos, los walabíes se mantenían en zoos y colecciones privadas. Algunos escaparon, sobre todo durante la segunda guerra mundial, cuando la

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Tuesday, November 16, 2021 8:10 AM

Research demonstrates speech-in-noise training helps children with auditory processing disorder

Children with APD have difficulty perceiving speech when there is background noise and may have trouble on cognitive tests

Stephanie Santo
Psychology

Photo by MI PHAM on Unsplash

Central auditory processing disorder (APD), a hearing disability, can impact cognitive functioning and academic performance in those who experience it. It is typically diagnosed in childhood. Children with APD have difficulty perceiving speech when there is background noise, called speech-in-noise perception, and may have trouble on cognitive tests.

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Wednesday, November 10, 2021 8:22 AM

Deep sea bacteria use selfishness to their advantage

Some bathypelagic bacteria have found a way to maximize their energy intake by taking food into their cells before breaking it down

Sarah Brown
Marine Science
University of North Carolina - Chapel Hill

Photo by Cristian Palmer on Unsplash

The bathypelagic zone of the ocean, which spans depths between 1,000 and 4,000 meters (3,300 – 13,100 feet) below the ocean's surface, is characterized by permanent darkness, low temperatures, and high pressure. In this hostile environment, slow-growing bacteria survive by relying on sinking organic matter, including proteins and carbohydrates called polysaccharides, from algae in the sun-lit surface waters of the

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Tuesday, November 9, 2021 7:45 AM

The screen you are reading this on is probably emitting volatile organic compounds

A new study demonstrates that, in addition to a variety of other household products, LCD screens also emit these compounds

Kay McCallum
Atmospheric Chemistry
McMaster University

Photo by Jorge Ramirez on Unsplash

We spend a lot of time indoors - so it's important that we know what's in indoor air. Indoor chemists are especially concerned with volatile organic compounds (VOCs, a class of molecules that includes benzene, formaldehyde, and more), which can be harmful to human health and are highly reactive.

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Monday, November 8, 2021 8:22 AM

Getting vaccinated against COVID-19 improves mental health

People who received the COVID-19 vaccine experienced less depression and anxiety compared to unvaccinated individuals

Danielle Llaneza
Health and Medicine
Hunter College and MD Anderson Cancer Center

Photo by Erin Aguis on Unsplash

Vaccine hesitancy remains a pressing issue during the COVID-19 pandemic. About 69 percent of people in the US who are 12 years or older have received the full vaccine dosage, thus protecting them from COVID-19. Yet, a portion of the remaining population remains reluctant to get the vaccine. This group's decision is based on their concern about the vaccine's safety, lack of belief in the danger posed by COVID-19, and

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Friday, November 5, 2021 8:43 AM

Don't bank those seeds — some oaks can be "cryopreserved"

Acorns can't be frozen, but tips of oak tree shoots can

Christina Del Greco
Genetics and Genomics
University of Michigan

Hao Zhang / Unsplash

Due largely in part to human-induced climate change, up to 40 percent of all species of plants are at risk of extinction. In response, conservationists have developed seed banks, where seeds of at-risk plants are frozen and stored in case of emergency.

Many species of oak trees fall on the list of endangered plants. However,

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Thursday, November 4, 2021 7:50 AM

Male and female mice form memories of fearful events differently

A drug that blocks memory forming in male mice has a different effect in females

Rita Ponce
Evolutionary Biology
Polytechnic Institute of Setúbal

Memory is the process of encoding, storing and retrieving information by the brain. Several studies indicate that fear memories are processed differently in male and female animals, but the basis of these differences are still mostly unknown. A study published in *Nature Communications* has brought new information to the table: a drug known to reduce the ability to remember fearful events in male mice turns out to to *increase*

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Wednesday, November 3, 2021 9:13 AM

Psilocybin reduced depression symptoms as much as a leading antidepressant

New research compared the "magic mushrooms" component to Lexapro

Soren Emerson
Neuroscience
Vanderbilt University

Photo by Önder Örtel on Unsplash

Since their introduction in the late 1980s, selective-serotonin reuptake inhibitors (SSRIs) have become the go-to treatment for major depression. SSRIs, however, have a number of limitations: they take several weeks to start working, can cause a variety of side-effects, and do not help some people with depression. A series of recent clinical investigations suggest that psilocybin, the active compound in magic mushrooms, may be an

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Wednesday, October 20, 2021 9:39 AM

Cocaine use slices and dices RNA in mouse brain cells

The analysis of epigenetic changes caused by cocaine use adds to the evidence that substance use disorders are rooted in biology

Anna Rogers
Molecular Biology
UC Berkeley

Photo by Omar Flores on Unsplash

Neuroscientists are known for doing some strange things to mice in their pursuit of learning about the brain. One such strange thing is training mice to self-administer cocaine, but it's all for a good cause: Self-administration can help us understand the biological underpinnings of substance use disorders.

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Tuesday, October 19, 2021 8:00 AM

Your gut bacteria may be hoarding your medication

Researchers have observed this effect in petri dishes and nematodes

Madeline Barron
Microbiology
University of Michigan

Photo by Towfiqu barbhuiya on Uns

When we take medications, we generally do two things: first, we swallow some pills, then we wait for them to kick in. Whether or not they do, however, may be tied to our gut microbes.

Intestinal bacteria influence the availability and activity of therapeutic drugs in the body. For instance, some bacteria metabolically convert, or

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Saturday, October 16, 2021 10:45 AM

Meet the springhare: the first glow-in-the-dark African mammal known to science

Researchers discovered the springhare's fluorescent abilities entirely by accident

Shakira Browne
Zoology
University College Dublin

Olson et al 2021 under CC BY 4.0

Fluorescence is caused by an animal absorbing light and bouncing it back out again, and in nature, it's not a new thing. Fluorescence occurs across only a handful of mammals but they span three different continents and inhabit entirely different ecosystems. The platypus is one such animal, whose glow-in-the-dark abilities were only discovered in 2020.

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Friday, October 15, 2021 8:45 AM

For the first time ever, researchers have "housebroken" cows

Controlling where cow waste ends up could lead to cleaner air and water and decreased greenhouse gas emissions

Fernanda Ruiz Fadel
Animal Behavior and Behavioral Genetics
Advanced Identification Methods GmbH

Photo by Lemig on Unsplash

In a strange triumph of science, researchers have now successfully potty trained 11 cows. The study, done by research groups in Germany and New Zealand, included 16 calves, which they trained by giving the calves a reward when they urinated in a latrine and later by adding an unpleasant stimulus (three-second water spray) when they began urinating outside of the designated area. The calves' potty training performances are

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Thursday, October 14, 2021 7:50 AM

Feeding extra amino acids to cells with a mutated enzyme makes them grow faster

This new finding could lead to advances in treatment of diseases caused by ARS mutations

Christina Del Greco
Genetics and Genomics
University of Michigan

Photo by David Clode on Unsplash

Our cells require proteins, which are composed of individual amino acids connected in a long chain, to perform important functions. These amino acids are delivered to protein-building machinery by another molecule called a tRNA. Amino acids and tRNAs are attached together, or charged, by an enzyme colloquially known as ARS.

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Wednesday, October 13, 2021 7:20 AM

White pine blister rust's habitat range is changing with the climate

New study in Sequoia and Kings Canyon National Parks demonstrates the complexity of changing plant-pathogen interactions

Ornob Alam
Population Genetics
New York University

Marek Argent on Wikimedia Commons (CC BY-SA 3.0)

A rapidly changing climate is expected to shift where species live. This will also alter human activities like agriculture and forest conservation, as the ranges of plant pathogens change.

Scientists have been predicted that climate change will both increase and decrease the prevalence of a pathogen across its geographic range.

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Tuesday, October 12, 2021 7:25 AM

These uses of poop for protection are stranger than fiction

Defense by dung doesn't always elicit disgust in predators to repel them

Simon Spichak
Neuroscience

Judy Gallagher via Flickr (CC BY 2.0)

To some animals, their own excretion isn't just waste. They may use their fecal matter to ward off predators. Here are several examples of fecal prowess.

Poop…ink?

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Monday, October 11, 2021 8:30 AM

Distance and our eyes distort the true colors of stars

New research calculates the colors of stars based on their actual energy distributions

Briley Lewis
Astronomy and Astrophysics
University of California, Los Angeles

Hubble / NASA, ESA, and the Hubble SM4 ERO Team

From our perspective on Earth, most stars look like tiny, twinkling dots. But what color would a star be if you could actually see it up close?

Most astronomy textbooks will clearly say hot stars are blue, and colder stars are red. These colors come from an idealized version of the light a star gives off, called a blackbody curve. That's not quite the whole story.

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Friday, October 8, 2021 8:05 AM

Zebrafish without "love hormone" neurons show no desire to socialize with each other

New research shows the importance of oxytocin for social affiliation and isolation

Kareem Clark
Neuroscience
Virginia Polytechnic Institute and State University

Whether you're a social butterfly or a lone wolf, the brain circuits that define social behaviors begin forming early in life and mature over a lifetime. But *how* the social brain develops has remained unclear, and new research explores oxytocin – often referred to as the "love hormone" – for answers.

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Thursday, October 7, 2021 8:51 AM

Wild Goffin's cockatoos can use tools, too

Scientists have observed captive cockatoos making tools before, but this is the first documented instance of tool use in wild cockatoos

Fernanda Ruiz Fadel
Animal Behavior and Behavioral Genetics
Advanced Identification Methods GmbH

Tool making is a complex behavior that, until recently, had only been confirmed in three species of primates (including humans), and in some birds, including captive Goffin's cockatoos. Now, a research group at the University of Vienna that has studied Goffin's cockatoos for decades has also observed the behavior in wild cockatoos.

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Wednesday, October 6, 2021 8:12 AM

Giant clams are growing faster than ever. That's not a good thing

This supercharged growth is likely due to nitrate aerosols in our modern atmosphere

Sarah Heidmann
Fish Ecology
University of the Virgin Islands

Photo by NOAA on Unsplash

The growth of modern giant clams is supercharged compared to growth measured from fossil clams. A recent study from the Red Sea has shown this, finding that growth lines from modern species are larger than those of fossils from similar animals dated to the Holocene and Pleistocene.

These increased growth rates appear to be related to higher amounts of

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Tuesday, October 5, 2021 8:20 AM

Skeletons' broken clavicles tell a centuries-old tale of humans and horses

Clavicle fractures can be used to identify horse riders from their bones

Katie East
Biological Anthropology
SNA International

Photo by Tim Mossholder on Unsplash

One thousand years ago, archers rode horses across the landscape of Hungary. They were probably intimidating, possibly threatening, and definitely adventurous, but just like equestrians today, they also fell a lot.

These horse riders remain a mystery. Who were they? Where were they from? When did they start riding horses? To answer these questions, an

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Monday, October 4, 2021 7:53 AM

Researchers observe a boar releasing two caged younglings in a impassioned rescue

The act sheds light on the prosocial behavior and empathy of wild boars, thought to be rare among animals

Simon Spichak
Neuroscience

Oliver Wilker from Pixabay

Humans aren't the only animals that step up to help others out of difficult situations. In a study recently published in the journal *Scientific Reports*, Michaela Masilkova of the Czech University of Life Sciences and her colleagues described a boar's daring rescue of two young wild boars stuck in a trap.

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Friday, October 1, 2021 9:06 AM

Roe deer pause development of their embryos for months, and researchers just learned how

An embryonic phenomenon discovered over 150 years ago may finally have an explanation

Charlotte Douglas
Genetics
Institut Curie Paris

Photo by Bob Brewer on Unsplash

In many species, not long after fertilization, the embryo implants into the uterus wall, preparing it for further development. In humans this implantation occurs at around day eight to nine after conception. However, in European roe deer, instead of implanting, the embryo stops developing, hovering in a period of dormancy.

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Thursday, September 30, 2021 8:09 AM

Female jumping spiders favor the most aggressive

males

A new study provides evidence for sexual selection in these spiders

Hayden Waller
Evolutionary Biology
Cornell University

Photo by Timothy Dykes on Unsplash

If you've ever witnessed an overly aggressive guy get bounced from a bar, you probably found yourself internally judging him. But new research published in the journal *Animal Behaviour* suggests that the opposite may be true for spiders: the more aggressive a male jumping spider is, the sexier his female counterparts find him.

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Wednesday, September 29, 2021 8:15 AM

People with sickle cell disease are less likely to get kidney transplants than those without

Sickle cell disease predominantly affects Black populations, and kidney transplants can save their lives

Danielle Llaneza
Health and Medicine
Hunter College and MD Anderson Cancer Center

Keith Chambers via Wikimedia Commons (CC BY-SA 3.0)

People with sickle cell disease encounter significant health issues such as kidney failure. Sickle cell disease, found predominantly in Black and African American populations, is when red blood cells are shaped like crescent moons (or "sickle-shaped") instead of round and disc-like. This shape, which may have had evolutionary benefits during previous generations, can block blood flow, and therefore oxygen transport

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